

REMARKS

Reconsideration is requested.

Claims 56, 67, and 69 have been amended. Claims 71 and 72 have been cancelled. Claims 76-81 have been added. Thus, claims 56-70, and 73-81 are pending in this application.

Amended claim 56 is a combination of pending claims 56 and 71. It is being made clear that the product defined by claim 56 is elongated, the longitudinal direction being used as a reference for the principal or main direction of the product and therewith for the first particle direction.

With respect to the clarity objections, it is respectfully submitted that claims 56, 57, and 58 form a chain of dependencies that is different from the chain of claims formed by claims 56, 61, and 62, so that claims 58 and 62 need not contain the same description of the composition of the product, as long as it does not interfere with the general description in claim 56. Claim 62 does not depend on claim 58.

Further, both chains of claims do not seem to be in conflict with each other. According to the chain of claims mentioned first, the small particles are fibers, the small and large particles are elongated and made of wood material. According to the chain of claims mentioned second, the small particles are fibers, the plastic mass is a thermoplastic polymer and the particles include particles of wood material. Thus, all or a part of the small and/or large particles may be made of wood material. This is not in conflict with the result of the chain of

claims mentioned first, according to which the small as well as the large particles are made of wood material.

Minor clarifying amendments have been made to claims 67 and 68.

Claim 68 refers to jute, which is a bark fiber material. The term "wood" refers to the hard solid substance of a tree below the bark. The Examiner's attention is directed to the attached pages from Webster's Dictionary.

Claims 71 and 72 have been cancelled.

New claim 76 is a combination of pending claims 56 and 61. New claims 77-81 correspond to pending claims 62-66, respectively.

Claims 56, 57, 60, 71 and 72 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,273,819 to Jex. Anticipation under 35 U.S.C. §102 is a standard of strict identity. The factual determination of anticipation requires the disclosure in a single reference of every element of the claimed invention.

The Jex reference discloses an extruded composite material product of a thermosetting phenol resin in which long-length medium-length and short-length fibers are included. In the example of Figure 7, described in Column 6, line 64, to Column 7, line 5, in which long, medium and short fibers are used, the short fibers are from about 10% to 50% randomly oriented. The long fibers tend to be oriented perpendicular to the extrusion axis, which extrusion axis can be considered to be parallel to the longitudinal axis of the extruded product.

In the example of Figure 10, described in Column 7, lines 38-55, all fibers have different lengths, long, medium and short also, the short fibers being randomly oriented. In the discussion of Figure 10, reference is made to the discussion of Figure 9 (Column 38-40). In Column 7, lines 14-19, it is explicitly observed that the greatest percentage of the fibers are aligned in the cross-axis plane of the axis of the plane of extrusion, that is perpendicular to the extrusion axis. Only the fibers at the side surfaces are aligned in the direction of the extrusion axis.

The Examiner refers to Column 7, lines 56-59, in which Figure 11 is discussed. There it is expressly stated that all fibers are of the same short or very short length. Thus, long fibers are absent.

Jex, therefore, does not disclose, teach or suggest a product similar to the product according to amended claim 56, in which the large particles are predominantly oriented such that their first particle direction is in the longitudinal direction of the product and the small particles are randomly oriented. The same is true for new claim 76, since Jex discloses the use of a thermosetting resin.

Claims 56-75 stand rejected under 35 U.S.C. §103 as being obvious in view of the single reference of U.S. Patent No. 4,559,262 to Cogswell et al.

It would not be obvious to modify the Cogswell reference in the manner suggested by the Examiner because there is no teaching or suggestion in the references of record of how the Cogswell product should be modified or of portions of the Cogswell reference should be selected and modified. There are

no teachings that there would be any advantage resulting from selecting portions of the structure of the Cogswell reference and substituting some fibers for other fibers. The mere fact that the structure of the reference could be somehow modified to result in the claimed structure does not render the claimed structure obvious unless there is a suggestion of the desirability of the modification.

Sufficient evidence has not been provided as to why one of ordinary skill in the art would have been motivated to modify the reference. Attention is directed to *In re Sang-Su Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002), in which the Federal Circuit stated:

As applied to the determination of patentability *vel non* when the issue is obviousness, "it is fundamental that rejections under 35 U.S.C. §103 must be based on evidence comprehended by the language of that section." *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983). The essential factual evidence on the issue of obviousness is set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966) and extensive ensuing precedent. The patent examination process centers on prior art and the analysis thereof. When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. *See, e.g., McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001) ("the central question is whether there is reason to combine [the] references," a question of fact drawing on the *Graham* factors).

The factual inquiry whether to combine references must be thorough and searching. *Id.* It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. *See, e.g., Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000) ("a showing of a suggestion, teaching, or motivation to combine the prior art references is an 'essential component of an obviousness holding'")

(quoting *C.R. Bard, Inc., v. M3 Systems, Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998)); *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references."); *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998) (there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant); *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) ("teachings of references can be combined only if there is some suggestion or incentive to do so.") (emphasis in original) (quoting *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)).

The need for specificity pervades this authority. See, e.g., *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed"); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) ("even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious."); *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (the examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references").

With respect to Lee's application, neither the examiner nor the Board adequately supported the selection and combination of the Nortrup and Thunderchopper references to render obvious that which Lee described. The examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the

issue of motivation to combine. This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983). Thus the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion.

Similarly, here, no evidence has been provided as to a teaching in the prior art that would motivate one of ordinary skill in the art to modify the Cogswell et al. reference in the manner suggested.

Even if evidence was provided that the Cogswell et al. reference could properly be modified, the modified reference would still fail to teach or suggest a product meeting all the requirements of claims 56 or 76.

The Cogswell et al. reference discloses the production of intermediate (semi-manufactured) products by pulltrusion of fiber-reinforced structures comprising a thermoplastic polymer and reinforcing filaments extending longitudinally of the structure (Column 1, lines 56 et seq.). According to Column 2, lines 65, et seq, continuous fibers or filaments are fibers that are sufficiently long to give a roving or two of sufficient strength, under the processing conditions used, to be hauled through the molten polymer. See also Column 3, lines 20, et seq.

It is clear that all the fibers/filaments in the intermediate product are oriented in one direction, equal to their orientation at the start of the process.

Cogswell is not in any way involved with including fibers of other dimensions or with different orientation of fibers of different size. The pulltruded products are used as an intermediate (like a sheet or a band) for many applications (Column 7, lines 64, et seq.). From, amongst others, Column 5, lines 3, et seq. and Column 7, lines 42, et seq., it can be understood that the impregnated fiber products obtained by the processes described may be chopped into pellets or granules in which the aligned fibers have lengths from 3-100 mm (preferably 10 mm. See Column 9, line 18). Clearly, after chopping, the pellets or granulates are randomly oriented (they form a bulk good), and consequently the filaments present in the various pellets of granulates are randomly oriented with respect to each other.

According to Column 9, lines 30 et seq., the products obtained by the process can be used in injection molding of reinforced articles. These intermediate products may be blended with pellets of other thermoplastic products (lines 48, et seq.). Molding powders with reinforcing fibers up to about 0.25 mm long could be used.

In the blend, the pellets/granulates of the intermediate product as well as the pellets of the added "other" pellets will form a mass in which the fibers are randomly oriented (Column 10, lines 5-6, and lines 20-23).

Thus, Cogswell teaches an intermediate product, in which all filaments are oriented in the same direction, and a final product in which all fibers are randomly oriented.

Cogswell, therefore, does not disclose, teach or suggest a product similar to the product according to amended claim 56, or new claim 76.

Therefore, claims 56 and 76 are allowable.

As claims 57-70 and 73-75 depend from claim 56, they too are allowable.

In view of the foregoing, allowance of claims 56-70 and 73-81 is respectfully requested.

The Examiner is requested to telephone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time.

Respectfully submitted,

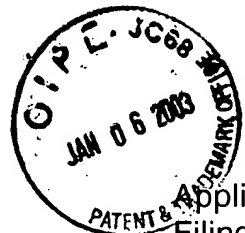
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By: _____



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Inventor Dirk Van Dijk et al.
Assignee Tech-Wood International Limited
Group Art Unit 1772
Examiner Alicia Chevalier
Attorney's Docket No. VR2-002
Title: Plastic-Based Composite Product and Method and Apparatus for Manufacturing
Same

VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING
RESPONSE TO OCTOBER 4, 2002 OFFICE ACTION

In the Claims

The claims have been amended as follows. Underlines indicate insertions
and ~~strikeouts~~ indicate deletions.

56. (Amended) Plastic-based composite product comprising a plastic
mass in which particles are homogeneously embedded, which particles have
tensile strength in a first particle direction, said product having a chosen principal
product direction,

wherein the particles comprise:

small particles being fibres and having a random orientation and a length
of 0.2-2 mm; and

large particles dominantly orientated such that their first particle direction
is in said chosen principal product direction, said large particles having a length
in the first particle direction of about 2-6 mm, wherein the product is elongated
and the chosen principal product direction is the longitudinal direction of the
product.

67. (Amended) Product as claimed in claim 62, ~~including~~ wherein the particles include particles of non-wood material present in the plastic mass in a quantity of 3-25% by mass, said particles of non-wood material including fibres of natural cellulose polymer.

69. (Amended) Product as claimed in claim 62, ~~including~~ wherein the particles include particles of non-wood material present in the plastic mass in a quantity of 3-25% by mass, said particles of non-wood material including glass fibres with a length of 4-5 mm and a diameter of 0.013 mm and a ratio of length to diameter in the range of 300-400.

Claims 71-72 have been cancelled.

Claims 76-81 have been added.

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